

REMARKS

In the office action, claim 11 was objected to for informalities. Claims 8-10 and 15 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1, 5-8, 10, 15, 16, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Green et al. (US 6,724,419) in view of Tsien (US 5,283,433). In addition, claims 11-14, 17, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cable (US 6,614,452) in view of Tsien. Claim 4 was deemed to be drawn to allowable subject matter.

In this response, claims 8-11 and 15 have been amended. Claims 1 and 4-20 remain pending in this application.

Reconsideration of the application in view of the amendments and following remarks is respectfully requested.

Objection to the claims

Claim 11 was objected to for informalities. Applicants have amended claim 11 to remove the word “the” in the first line as suggested by the Examiner.

Withdrawal of the objection to claim 11 is respectfully requested.

Rejections under 35 U.S.C. §112, second paragraph:

Claims 8-10 and 15 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Claim 8 has been amended to change “the number of images” to “a number of images” so as to remove the antecedent basis problem identified by the Examiner. Claim 9 has been amended to positively recite the step of calculating the number of images and to more clearly recite the steps of the invention. Claim 10 was amended to remove the phrase beginning with “for example”. Claim 15 was amended to delete the phrase “for controlling”.

Applicants respectfully submit that the amendments to claims 8-10 and 15, have obviated the antecedent bases problems and that those claims are now sufficiently definite under 35 U.S.C. § 112, second paragraph.

Withdrawal of the rejections under 35 U.S.C. §112, second paragraph, is respectfully requested.

Rejections under 35 U.S.C. §103(a) (Green et al. and Tsien)

Claims 1, 5-8, 10, 15, 16, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Green et al. (US 6,724,419) in view of Tsien (US 5,283,433).

Green et al. describes an automated microscope system and a method for acquiring images at a maximum acquisition rate of the camera while devices external to the camera vary various parameters of the acquired images and operate asynchronously with the camera so as to allow acquired images to be displayed as a sequence that shows continuous variation in the acquisition parameters. See Abstract.

Tsien describes a scanning confocal microscope providing a continuous display.

Independent claim 1 of the present application recites a method for setting the system parameters of a scanning microscope that includes, among other features, the following steps:

Controlling an acquisition of an image of a specimen with a control computer,
Inputting at least one image quality feature after an image of the specimen is acquired . . .

Converting the at least one image quality feature into at least one system parameter of the scanning microscope by the control computer . . . ; and

Setting the at least one system parameter;

wherein an image quality expected to be achievable, for the at least one inputted image quality feature, is calculated in the next acquired image and outputted to the user.

Applicants respectfully submit that the combination of Green et al. and Tsien does not teach or suggest at least the steps of inputting at least one image quality feature and converting the image quality feature into at least one system parameter. In addition, claims 11-14, 17, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cable (US 6,614,452) in view of Tsien.

Green et al. describes a system and method of decoupling the camera control functions from functions of external devices for changing the parameter settings during image acquisition so as to maximize the image acquisition speed and to show a sequence of images that show a continuous change in the image acquisition parameters. Green et al. does not teach or suggest inputting an image quality feature (such as a bleaching behavior of a fluorescent marking of a specimen) and then

converting that image quality feature into a system parameter of the scanning microscope (such as a wavelength of the light source). Rather, Green et al. merely teaches, for example, that the fluorescence of a protein molecule can be effected by varying the wavelengths of light. Green et al. also describes how the wavelength can be varied continuously while images are acquired in rapid succession. See e.g. column 10. There is no suggestion, however, for inputting the image quality feature (such as the bleaching behavior of a fluorescent marking) and having the control computer convert that feature to a system parameter (such as a wavelength).

Tsien does not cure the deficiencies of Green et al. Tsien merely describes the use of a confocal microscope to image a specimen, but does not suggest inputting an image quality feature or converting that feature into a system parameter by a control computer. In addition, claims 11-14, 17, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cable (US 6,614,452) in view of Tsien.

Independent claim 15 recites a scanning microscope that includes the features of a control computer and an operating console for inputting an image quality feature after an image has been acquired, whereby the image quality feature can be converted by the control computer into a system parameter of the scanning microscope that can be set.

For the reasons discussed above with respect to independent claim 1, Applicants respectfully submit that the combination of Green et al. and Tsien does not teach or suggest those features of independent claim 15.

Withdrawal of the rejections to claims 1, 5-8, 10, 15, 16, 19, and 20 under 35 U.S.C. § 103(a) is respectfully requested.

Rejections under 35 U.S.C. §103(a) (Green et al. and Tsien)

In addition, claims 11-14, 17, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cable (US 6,614,452) in view of Tsien.

Cable describes a graphical user interface for in vivo imaging that allows the user to perform numerous operations suitable for analysis of in vivo images within a single display screen or a single window.

Independent claim 11 recites a method for setting system parameters of a scanning

microscope, comprising the steps of:

Controlling an acquisition of an image of a specimen with a control computer;
Modifying at least one image quality feature after an image of the specimen is acquired;
Simulating the acquisition of a further image in the context of a modified system parameter;
and
Displaying the simulated further image to the user.

Support for independent claim 11 is provided in the specification, for example, at pages 10 and 11. Applicants respectfully submit that the combination of Cable and Tsien does not teach or suggest the step of simulating acquisition of a further image in the context of a modified system parameter. The Examiner asserts that the step is inherently provided in the Cable reference, since “after an image is displayed, the brightness image quality feature” can be adjusted using the brightness setting without having to acquire a further image “hence simulating a specimen imaged under greater light intensity”. Office Action at page 6.

Applicants disagree with the Examiner’s conclusion. Changing the brightness control for the display of an image in Cable merely changes the display of the image already acquired. There is no suggestion for simulating “the acquisition of a further image” as recited in claim 11, nor for simulating the acquisition of the further image “in the context of a modified system parameter” as recited in claim 11.

Tsien, described in the preceding section, also does not cure the deficiency of Cable. There is no suggestion for the simulating step in Tsien.

Withdrawal of the rejections to claim 11-14, 17 and 18 is respectfully requested.

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CONCLUSION

It is respectfully submitted that the application is now in condition for allowance.

Respectfully submitted,
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Respectfully submitted,

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